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cians, on the other hand, who used to practice healing arts in the good old time, when "Godlike was the doctor, who was also a philosopher," are beginning to take some interest in the body, and to read books on mind cures, and psycho-physics, hygiene and physiological psychology, and to realize that the student of religion and of idealism cannot, with impunity, neglect the study of the common forms of morbid psychosis. We desire, for our part, to see the psychological movement, which now seems destined to mark the present as the psychological, as the last quarter of a century has been the biologic-evolutionary age, kept in the severest sense, experimental and scientific. The dangers and difficulties are vast, and the specious false ways many, but we have a nucleus of solidly established facts, and the reward of every achievement is likely to be at least no less than any that have crowned the progress of science in the past. But we must ever remind ourselves that while "strange things are true, they are not truly known till they are related to what is tested, else they remain solitary and unfruitful."

Great credit is due the English society for calling attention afresh to the mysterious side of human life, and for later making known to English readers something of the valuable work of the French investigators of Paris, Nancy, etc. Mr. Meyers has taken great pains to see many of these men and their work. If good hypnotic subjects are more numerous in France than in England, it would seem that ghost seers are most common among cultivated classes in England. It is to be hoped, however, that the indication of more independent work in the study of abnormal states now apparent will lead to more solid results, and that the crude and premature theory of telepathy, which is by no means impossible, *per se* in some sense, but as yet lacks everything approaching proof save to amateurs and speculative psychologists will be allowed to lapse to forgetfulness. To the careful and patient experimenters and observers in this field there are now far better and far surer and far more useful results than these, though by methods far harder and slower. But it is by these that we prefer to labor.

Psychology. The Cognitive Powers. By JAMES MCCOSH, D. D., LL. D., etc., President of Princeton College. New York, 1886. Pp. 245.

Introduction to Psychological Theory. By BORDEN P. BOWNE, Professor of Philosophy in Boston University. New York, 1887. Pp. 329.

Psychology. By JOHN DEWEY, Ph. D., Assistant Professor of Philosophy in Michigan University. New York, 1887. Pp. 427.

The work first on the above list is to be supplemented by another on the motive powers of the mind, including conscience, emotions and will. The cognitive powers are here treated in three books as respectively presentative, representative and comparative. Dr. McCosh has taught psychology for thirty-four years, and compares his work to Uncle Toby's stockings, darned till hardly a thread of the original fabric remains. The book is neither dull or dry, but abounds in apt quotations in prose and poetry, stories, illustrations, sudden and unexpected but always impressive morals and hortatory passages, and seems to reflect, in the clearest and most direct way, the strong and beneficent personality of the author, not only

his convictions, but even very many incidents from his own experience being interspersed. Almost every page contains taking points admirably presented to catch the wandering attention of listless students in non-elective classes. The book is of value to every thoughtful teacher of this subject for its pedagogical suggestiveness. It is evidently made up of three factors: General matters of miscellaneous sorts, which, in an unusually prolonged experience as a teacher, its author has found effective and beneficial with the average college senior; the essential points in the Scotch philosophy, or more particularly in Thomas Brown, Stewart, Butler, Macintosh, Abercrombie, A. Smith, etc., which have survived from a long-ago study of these writers; and, thirdly, such material in contemporary psychology as in some cases its commanding importance has brought to the attention of every eminent administrative educator, and in other cases such as mere accidental or personal relations (as with his distinguished pupils, Professors Macloskie, Allen Starr and F. M. Baldwin), have impressed upon the author's mind. That with his advanced years, his heavy educational cares and responsibilities so vigorously borne, and his early absorption in the Scotch philosophy, the limitations of which those who most directly inherit its traditions now best see, Dr. McCosh should have maintained a mind so open to so many of the newer influences in the rapidly widening field of psychology, is a striking illustration of the beneficent effects of the true spirit inbred by studies in this domain, and makes the task of the honest and friendly critic particularly unpleasant. Judged from a scientific standpoint, however, little that is good can be said of the book. The wood-cuts of brain and sense organs that are inserted are but little more related to the text than the marginal figures with which ancient missals were illuminated were wont to be. It is perhaps something to associate the study of perception in the old abstract fashion with even the pictures of these things, although but in the most casual way, as we associate a book with the tree under which we read it. There is an apparent incommensurability between seeing, feeling and thinking on the one hand, and the visual and tactile image of the corona, corpora and vermicelli of the convolutions, on the other, to the novice, that even mere juxtaposition may alleviate. Symbolic figures like the oden of Mr. Betts or the pyramid of Dr. Hopkins, or the circles of modern logicians, or current diagrams illustrating aphasia, etc., have obvious illustrative value. The relation between thought and brain, however, is anything but obvious, but appears more plainly as the anatomy of brain and analysis of psychic processes become finer. It is far less, and perhaps not all by virtue of its morphology, but rather by virtue of its finer anatomical and chemical properties, that the brain is the organ of psychic activities, as yet but imperfectly unknown. This, we believe, should be carefully indicated, or else the anatomical part passed over, in elementary teaching. Many of the allusions to finer structures and processes by Dr. McCosh are inexcusably careless, to use no stronger terms. We are told that "all along the spinal column there is automatic action which is reflex." "There is a cell called a ganglion into which one nerve enters and from which another goes out." Questions of structure are referred to physiology. The communication from the spinal cord is "up by the medulla oblongata and the crura cerebri to the corpora striata and optic thalami." "The action to the brain travels at the rate of 140 to 150

feet in the second. The action from the brain travels about 100 feet in the second." The author hastens on through this strange region, which is dismissed with a caution that all materialistic ideas must be left behind, despite the temptation of youth to the contrary in the study of psychology. "We are not to allow ourselves to look on mind itself, or any of its operations, as occupying space, as extended or having figure, as having weight or levity, height or depth, elevation or depression, attraction or repulsion, solidity or elasticity, motion or rest, light or darkness, warmth or frigidity." Even words derived from material objects, as idea, psychic, spirit, feeling, emotion, impression, understanding, conception and apprehension, must be stripped of materialistic associations with their etymologies. But why then the anatomical illustrations, which not only precede, but follow? Why then the skin with its "two layers," and the nerves in the tongue, fingers and lips "generated at these points by use," and "the muscle sense, including in it the volition and the resistance which first gives us the idea of Power, Potency, Energy or Force, out of which proceeds our idea and conviction as to causation?" Why are we told that "distinctness of vision requires that objects shall be so far apart that their images on the retina shall reach more than one cone?" Why, apart from the many such inaccurate or mistaken statements, is space given to the anatomical and physiological relations of aphasia, memory and association, etc.? Still we are thankful for the good will towards scientific psychology, and commend the sagacity that sees its importance, even if the former be as yet all unreconciled with the traditions of the intuitive school, and the latter uninstructed in details.

A still more grave defect of the book is the essential failure of the author to profit from both Greek and German philosophy. There is abundant evidence here, and in his other works, that he has never taken the trouble to acquaint himself, in any historic or sympathetic way, with the great writers in his field in both these languages. He elsewhere declares that idealism has no place in philosophy, and that the latter will never be properly established till this is acknowledged, but pleads for the old Scotch "realism," as the ideal "American philosophy." As the Scotch school may be said to represent hard-headed common sense, without the refinements or subtleties that are bred of specialized research, by any set method or direction, this is a most convenient attitude for a busy man, who must keep up the semblance of philosophy on short allowance of time and information, and must commend itself to many practical American minds who cultivate the power to make summary snap-judgments on all topics, finite or infinite. We believe, however, that blindness to the great lessons of historical philosophy involves the gravest loss to students. A course in idealism, as treated by Kant, whom our author cannot abide, Plato Hegel and the rest, we believe, stimulates the development of mental power, gives inner resources against all corroding pessimisms, tact to solve the practical problems of life and mind and zest, breadth and insight in any intellectual career unsurpassed if not unequalled by any other element of modern education. It especially illuminates religious sentiments, and gives both poise and a repertory of weapons against doubt, and ought to be entirely indispensable to all who would speak and be heard on religious

topics. That Dr. McCosh, with his great and long opportunities, has failed to utilize these deep sources of wisdom, we regard as deplorable for the real interests of religion, as well as of science. This, we believe, will be the verdict of those laborers in the philosophic field most nearly in sympathy with the religious standpoint of the author.

Once more there is often a dogmatism and self-assertation which is only calculated to entail prejudices and seriously to limit the unfoldment of mental power and future effectiveness. After stating that man's knowledge "begins not with relations, but with things," he adds, "in laying down this proposition, I undermine one of the most fatal—as I regard it—errors of the day." After saying that the infinite is both beyond our widest thought, and that to which nothing can be added or subtracted, he says: "After working out this two-fold aspect, I found that I had been anticipated by Aristotle." The great problem whether we are conscious of all our mental operations, is dismissed with the statement, "I hold that we were conscious of the acts at the time, but that they were not retained, as there was nothing to fix them in the memory." Again, "I do not agree with the theory of those who ascribe the creations of genius to unconscious mental action." Each of these is a commonplace view long current in philosophical literature, but is stated dogmatically and in the most momentous manner, without facts or arguments to sustain it, as if it were a great and original discovery. Thus he concludes "we have traced the powers of intelligence from the lowest to the highest, and have shown how our cognition and ideas arise." This modest claim is hardly calculated to encourage further study in this field. The book abounds in irrelevancies and discontinuity, and is of all grades of merit, from the extremes of garrulity to very impressive hortatory perorations. Had it been clearly recognized that the problem was to write an attractive primer in psychology, bringing together only the results most universally assented to, and of most practical importance, and pedagogically first, the book, with some material and many minor changes, might have been made commendable. Teachers who introduce young men, seniors though they be, into these studies, must expend their wisdom in showing where to begin, and shunning the inculcation of a sense of finality, furnish incentive to those who need it to pursue their studies further in the theological school, the psycho-physic laboratory, or graduate historico-philosophical or educational study. This book illustrates, in a word, not realism in any saving sense as the author claims, but eclecticism in every respect, which makes that word philosophically offensive.

Professor Bowne's book is mainly devoted to what he holds to be the underlying principles of pure or introspective as distinct from and presupposed by all forms of empirical psychology. These principles, he thinks, are best illustrated in common facts, and that an "anthology of madhouse and hospital stories" has an "odor of quackery." Though physiology "means well," and is an "estimable science," its influence in reconstructing psychology seems to the author declining. He is conscious that in his book many "will not find what they want," and "still more will find what they do not want," and many arbitrary omissions are confessed, owing to the plan of the work, but others are as free not to read as he to publish, etc. The work falls into two parts—the factors of the mental

life, and their combination. The starting point is the analysis of the individual consciousness. Psychology is a subjective and not an objective science, and is based on introspection. It is not truly studied by an analysis of language. Psychogenesis, observations of animals, etc., "admit of almost no experiment," and its "facts admit of no exact measurement." "The man who feels cold is cold," etc. All materialistic assumptions are to be "repudiated in advance." Anatomical discreteness is inconsistent with mental unity. If the brain secreted thought we could collect and look at it as we do bile. Materialism rejects the reality of the self as the subject of the mental states, which is the burden of what positive doctrine the book contains. "Thought and feelings demand a subject, and have no meaning apart from it." "Rational life, by its very nature, demands a unitary consciousness and a unitary subject." Neither the matter of the physicist, nor the thinking matter of the hylozoist, nor the theory of two parallel series, is rational. "If materialism be true reason is exploded." It is depressing, has no standard of truth, afflicts the pure psychologist with "tedious superficialities and drolleries." "What ever progress brain physiology may make it will never bring us one step nearer to materialism." It has "an irresistible tendency toward error, superstition and falsehood," and it has "falsified experience at the start," and gives a "manikin conception of humanity." The difficulty in identifying physical and mental facts lies in their complete unlikeness. Vibrations are not sensations. "No peering, even into the living brain, would give the least suspicion of the mental series attending it." Again, nerves never feel. Sensations are mental reactions against nervous actions, and are not passed along "from one atom to another, like a letter from hand to hand." A sentient nervous action is a square circle. The doctrine of the specific energy of nerves "has been largely abandoned." It is the "terminal structure" in which the specific energy resides. Thus "concerning the particular form of the nervous action nothing can be known," but "our complete ignorance of what takes place in the nerves is no psychological loss." Neither practically nor "psychologically should we be better off if we knew all about the form of the nervous action in any special experience and the place of its location." All such facts are "not properly psychological facts at all," nor even "facts of any kind" to the idealist. The psycho-physic law represents "no significant principle." A blind enthusiasm has magnified Fechner's formula into undue importance. "In the name of a mathematical formula, psychology is loaded down with meaningless absurdity." All explanations of after images are "purely hypothetical." The mixture of colors by rotating disk "does not take place in the mind but in the nerves." Such works as Helmholtz—"Sensations of Tone" and "Physiological Optics"—"reveal no new psychological principles." There are probably no unconscious sensations. Ideas have no intensity and also no attractive or repulsive forces by which they separate or unite. The studies of association-time merely show what was known before, viz.: that familiar processes are quickest. The "cerebral theory" of memory, which fills a long appendix, "has generally been regarded as demanding separate cells for the preservation of distinct experiences." Each idea, "we are told," is based on the action of a separate cell. Molasses *e. g.* has an odor, taste, a name for ear and eye is of many kinds and associated with many things, and is after all but one word,

while a man like Mezzofanti spoke fluently thirty, and knew something of seventy-two languages. Each one of all these variations demands a cell, and thus if the cerebralists were right the cells "would get filled up," and the possibilities of experience and knowledge would be exhausted. The facts of aphasia on the cerebral theory "lead to the most fantastic and grotesque assumptions and whimsies." It is all "physiological mythology born of materialism." It "necessarily increases our difficulties without adding any insight," "explains the obscure by the obscurer," abounds in "unmanageable features," is a purely gratuitous hypothesis, a piece of "physiological metaphysics," "immensely increases our difficulties without adding any insight," etc., etc.

The "thought-factor," according to Professor Bowne, works over sensation under the idea of time, space, cause, etc. Sensation is set over against the self, classified and related. If Mill's "psychic chemistry" theory of the origin of space-perception were true, it would "bring thinking to an end." The notion that sensation or that the mind is extended is also a "whimsey." If the thought of extension is extended the thought of infinite extension must require an infinitely large mind to contain it. Mill's view of the nature of the thinking self is "plain nonsense." By the theory of the "permanent possibilities of sensation" "language has been outraged," and "we are in the lowest depths of unintelligibility." "The metaphysical denial of the reality of substance leads to nonsense in the mental world and to nihilism and solipsism in the outer world." "The associative theory is one of the sorriest efforts of speculation." "Materialism cannot be joined with any sensational philosophy without mutual destruction." This alliance is "one of the many inconsistencies of evolutionary thinking." Mind-stuff and psychoplasm are "highly elegant conceptions" as "figures of speech that defy all interpretation." "Evolution has no such importance for psychology as its friends imagine." Its facts are "without theoretical significance." Herbert's deduction of feelings is "a failure in all respects." Physiological æsthetics is rejected, for a noise hurts a nerve no more than a note does. The claim that the self is made out of the sum of mental states is made up of "some extravagance, some ambiguity and considerable nonsense." Fichte's view of the rise of self-consciousness "is an abuse of language." Whether we can be conscious of more than one thing at a time is "an idle question." The view that memory "is the form of mental action most dependent on physical conditions" is "probably much exaggerated." Many facts of aphasia are "utterly opaque on any theory." The treatment of the judgment in formal logic is "entirely false to its psychological character," "highly artificial," and "often does violence to the psychological fact," "a barren study of verbal permutations." This tendency reaches its climax in the later forms of symbolic logic by becoming purely mechanical. The fourth dimension theories are like reasoning on the assumption of a square circle. The soul is in direct interaction with the brain, but need not be in it, but at an infinite distance from it, and in fact is not in space at all. The subject of localization of the functions of the brain is "in entire uncertainty." That the ground of insanity is physical "can hardly be said to be made out." Yet the soul and body are in some kind of interaction and mutual dependence. "Certain forms of memory seem even conditioned by physical participation."

Besides these salient points, the book of Prof. Bowne contains much current psychological matter and a few subtle criticisms. Though his spirit is much more narrow and provincial, the author is far better read in both the ideal and empirical literature of his topic than the writer of the book noticed above. But his work surpasses anything we have ever read in the field of modern psychology, not only in its hardihood of brunt denial of accepted facts and interpretations, which if sustained would reduce many a settled consensus back to the plane of debate, but in offensive and ill-bred language, which can only tend to lower the tone of the controversy, and which fills us all along with painful doubts whether a self-respecting reviewer ought to touch it. Students, whose knowledge of psychology was derived from this book alone, would be led to believe that all workers in a vast field of science, not only deal largely in "plain nonsense," "whimsies," that "outrage language," "are loaded with meaningless inconsistencies," if indulged in are liable to "explode reason," "bring thinking to an end," etc., but that scientific men at heart know better, and are "ever seeking to evade," "explain away," "escape" some great and obvious first truth of reason. They would think that those who seriously study the localization of functions in the brain, psycho-physics, symbolic logic, neurological physiology, comparative psychology, psycho-genesis, the two great works of Helmholtz, and all who labor in those fields; that morbid psychology, the unconscious in all its forms, and everything that savors of matter, evolution or sensation, represent a vast incoming tide of perversity, whipped up, to be sure, by diabolic cunning into fine and insidious intellectual sillabub, which is sweet to the palate, but which it is not merely folly but morally infectious to imbibe. The resources against these new men and methods and topics are first bravado of negation. Have not several critical inventories of human powers shown that understanding can never know this, and reason can never do that? No faculty or investigator must be allowed to poach beyond the lines laid down by the great Kantian survey, even for an hypothesis or conjecture. It is the function of the philosopher to enforce the licet and non-licet of the code. Secondly, mind must be dematerialized, which now means deneuralized. To do this at every point is Professor Bowne's chief effort. Among the many phobias, or morbid fears, now quite well defined, is mysophobia, or fear of dirt, first described in 1878, which impels the patient to wash every object he must touch, and to wash the hands after dreaded contact with everything more palpable than thin air, often scores of times a day, to avoid pollution or contamination. Its analogue we may call hylephobia, or morbid fear of materialism, also a very modern distemper, which afflicts, now and then, a philosopher with a horror of contact with the fresh facts of science so necessary to his survival in the world of modern thought, and impels him to try to purge every element of matter from facts he cannot escape. Hylephobia, however, is now often regarded as a sacred madness, as epilepsy used to be. It befalls only the good; and the richer and fairer the world of sense, and the more violent the phobia against it, the more surpassingly rich and fair and real must the purely subjective, rational, ideal world appear. All the wisdom of scientific psychology melted in this author's crucible is but slag and dross, and that of so malodorous a kind that not only is he as excusable for the oft-repeated errors and ignorance of de-

tails his pages betray as he would be for holding his nostrils in a foul air, but we suspect that this ignorance and audacious defiance of authorities is a part of the disease, and thus as sublime as the filth in which white-souled anchorites gloried. Thus it would be not only a long, but an all too-thankless, and even idle task, to point out the blunders in detail. Although students of the book would find it infectious of this mania, they would get very little knowledge of the adversary against whom they were to crusade. Indeed, they would hardly suspect even the existence of a vast and concilient body of facts concerning the validity and significance of which there is no dispute among those competent to judge, and still less would they glimpse their vast variety, their wide-reaching suggestiveness, or realize the unsurpassed mental discipline and moral vigor they afford, the quickening of all the psychological roots of the religious sentiments of reverence, subordination and hopefulness they bring. Against the old materialism of Büchner, Moleschott, Carl Vogt, or Czolbe, which is the real object of many of our authors' attacks, and of which many residua still linger, especially among young men, his weapons are occasionally effective, but the psycho-physics of to-day is far nearer the standpoint of Kant than of these writers, and admits, as fully as Professor Bowne himself, the utter incommensurability that appears between a physical solid and conscious activity. He repudiates mad-house tales, but Mr. Galton says: "No professor of metaphysics, or psychology, or religion, can claim to know the elements of what he teaches, unless he is acquainted with the ordinary phenomena of idiocy, madness and epilepsy. He must study the manifestations of disease and congenital folly, as well as those of society and high intellect." The spirit animating this volume is utterly unlike that of Lotze, whom the author followed with such fidelity in an earlier work, or that of Prof. Alexander, who admirably says: "There are two common mistakes—one, the denunciation of physiological methods by men who have never seen a ganglion cell; the other, the denunciation of subjective methods by men who have never given an hour to introspection. It does not appear to be necessary, however, that a knowledge of one set of facts should be incompatible with a knowledge of the other set. A combination of the two is the ideal psychology." We would not lay aside this almost purely negative book, which it is generally very hard to treat seriously, however, without expressing some real obligations to the author, to whose vigorous analysis we are indebted for some insight, and who has pointed out a few real defects in both the methods and inferences of modern psychology. These defects are by no means fatal, but very slight, incidental, and easily corrected. "Indeed," he says, "if our mental possession should suddenly shrink to what we know, the residue would be paltry and pitiable in the extreme. It is only by venturing beyond knowledge that a social or even mental existence becomes possible." This cheap opinion of knowledge may perhaps account for his unceremonious way of treating it, and his struggles beyond it, if it be a struggle for mental existence, every evolutionist will easily excuse. Again, he exclaims in a collapsing or despairing way, near the end of the book, "there is a great body of facts which suggest that the mental life cannot go on without the physical. Can any light be thrown on this question?" That is, indeed, the serious question, but does it not belong at the beginning of any helpful

book, devoted so largely to just this question, rather than at the end? That is, at least, precisely where the psycho-physics he so perhorresces begins, and that is just the question. Even the few isolated facts he reports, if sympathetically scrutinized, start us so hopefully, at least, towards answering.

Dr. Dewey's book is to Hegel as Prof. Bowne's is to Lotze. In each case the spirit of the masters animates the pupil, but has not gained in insight or breadth of view. Dr. Dewey is a less servile disciple of a better master, is on the whole better trained, not only in psychology, but in the general field of philosophy, and his book is pervaded by an indefinitely better spirit, and his material is wrought together with far more vigor, coherence and originality. There is no trace of cynicism or vulgarity. The author unfolds, with the most charming and unreserved frankness and enthusiasm, the scheme of absolute idealism in a simple yet comprehensive way, well calculated to impress beginners in philosophy, to whom the book is addressed, and with helpful pedagogic diversions. Psychology is the science of the "self," which has the power of recognizing itself as I, knows that it exists, or "exists for itself." This is consciousness which "can be neither defined or described." "The fact of the existence of self or of consciousness is accordingly a unique, individual fact." The content of knowledge is universal, for all could know it. Psychology is defined as "the science of the reproduction of some universal content or existence, whether of knowledge or action in the form of individual, unsharable consciousness." Thus "physiological psychology cannot aid psychology directly. The mere knowledge of all the functions of the brain and nerves does not help the science, except so far as it occasions a more penetrating, psychological analysis, and thus supplements the deficiencies of introspection." Physiological facts are "of no avail, for they tell us only about certain objective processes." "The ultimate appeal is to self-consciousness." Knowledge is thus universal, while feeling is individual, and will connects the two. These three are not faculties, but inseparable aspects of consciousness, resulting from artificial analysis, but for convenience made the basis of the three-fold division of the book, the greater part of which is given to knowledge. Here, too, lies its chief merit and originality. Sensation is "the elementary consciousness which arises from the reaction of the soul upon a nervous impulse, conducted to the brain from the affection of some sensory nerve-ending by a physical stimulus." The latter is always some form of motion. "A sensation is a consciousness; it not only exists, but it exists for the self." Yet we are told on the next page that we have no more direct knowledge of it than of an atom, and that it is not immediately present in consciousness. Sensations tell us nothing but their own existence, or how the subject is affected. Motion and sensation have nothing in common. Despite the usual dualistic "chasm," motion is merely a mental phenomenon. The nervous change is not cause, but stimulus or occasion on which the soul develops sensation. A sensation is "the transitions of the physical into the psychical." On this whole topic of sensation, it is impossible to grasp the author's meaning. Sensations are not knowledge. They are purely subjective, separate and distinct, each from each; in short, chaotic. Knowledge consists in the processes of relating these individual feelings and discrete fragments. They

must be transformed not only into unities higher than those of time and space, objects, relations and ideals, but they must be changed into the self that knows and idealizes. To this end the mind must react upon sensuous material in attention, and retain the apperceived content in memory. Thus sense becomes significant, and its elements coherently related. Association "never leaves sensuous elements isolated." It combines air-pulses to tones, makes all colors out of the three elementary sensations, fuzes and reintegrates according to the familiar rubrics of successive, simultaneous, contiguous and similar, etc. Artists use philosophers notice, the associative tie that broadens but does not burden the mind, and controls habit. These products of synthesis may be disassociated by different influences, as interest or value is given to different elements. Sensations are thus distinguished by tone, by nearness of relation to self, morality, etc., till apperceptive organs, or "ways in which we tend to interpret sensations," are established. Disassociation thus breaks up the mechanism—bursts the bonds that would tie the mind down to objective data, allows it to play freely, according to its interests, and breaks up control by environment. Thus ideal internal ends may be pursued by attention, which is internally initiated, to the ends of the self. Attention is "that activity of the self which connects all elements presented to it into one whole, with reference to their ideal significance." On the fundamental principle that "nothing can be in consciousness which consciousness does not put there," attention, as the organ of selection, is very important. It selects only those elements which point beyond themselves. Thus only interpreted sensations, and never sensations as such, enter into our knowledge. This is idealization, for it passes beyond present existence. By attention the whole organized self is brought to bear or "read into" selected sense elements so as to give them meaning by "reading itself into them." Thus unity, idealization, meaning, distinctness arise. Attention is fundamentally a "self-developing activity." Thus with the aid of the assimilative function of retention "the world becomes objectified self, and the self subjectified world." "The world known is the externalized self; the self-existing is the known or internalized world." Leaving the *activities* of knowledge, its *stages* are studied as perception, memory, imagination, thinking and intuition respectively. *Perceiving* is "opposed to thinking," because it is objective and not subjective. Visual and tactual space are briefly considered, to show how it is the will which separates objects from itself. This is the central distinction in this field where differentiation predominates over identification. *Memory* is higher for the present is transcended. All its objects are "wholly ideal." Past and present are related or unified in rythm. Memory is possible only where there is a permanent self amid changing expressions. *Imagination* embodies ideas and is freed from the limitations of memory. It is a "universalizing activity," releasing the ideal from the petty and particular, making poetry in a sense truer than history, and implies a basal unity between man and man, and man and nature; in short, demonstrates the "universal self of humanity" in organic unity with nature. *Thinking* still further "dissolves out" the universal and ideal "to discover the meaning of facts universally." It is distinguished as (a) conception, which "is the apperception of the apperceptive process;" (b) judgment, which refers the

ideal, or universal, to the particular element; and (c) reasoning, which is the recognition of relations. The highest reasoning is philosophy, which is "complete science," and seeks to find a true universe. *Intuition* is immediate knowledge of the world, self and God. Every fact is seen to be related to every other, the whole is found in the part, and this completed interdependence is necessity. The world is known because we idealize it, and the self is known because it is realized. This process goes on through the self and from this fact we gain the conception of freedom. God is the true self-related, or the organic union of the self, and the world, of the ideal and the real. The goal of all knowledge or truth is "the complete manifestation of the unifying and distinguishing activities of the intelligence," and all error or agnosticism is emphasizing one to the exclusion of the other of these processes.

Feeling is "the internal aspect of mental life," and exists so far as consciousness is unobjectified. As the latter is never complete feeling, though unique and unsharable is "as wide as the whole realm of self," and is the undivided side of its activity. If the self is furthered, pleasure; if hindered, pain results. Successful adjustment is pleasant. Feelings are sensuous and formal, qualitative, intellectual, aesthetic and personal. The last three have gradually unfolded into universality. Under personal feelings peace, dependence, faith, obligation, remorse, humility, sympathy, love, conscience, etc., are treated. Conscience, *e. g.*, is a "feeling of the universal and objective worth of personal acts, but in what degree the feelings are true to fact depend upon how universal and objective is the self which feels." Will originates in sensuous impulses. It is the self realizing itself. The essence of self is the self-determining activity of the will, which is objectifying activity. Science is the objectified will. Will finds its motive in feeling its result in knowledge. It unites the individual and the universe, joins the finite self and the infinite personality in which truth, happiness and righteousness are united in one.

Dr. Dewey's book is admirably adapted to reproduction by a resumé of salient points and ever recurrent phrases. Its merit and originality are great, but they all lie in the scheme rudely outlined above. That the absolute idealism of Hegel could be so cleverly adapted to be "read into" such a range of facts, new and old, is indeed a surprise as great as when geology and zoology are ingeniously subjected to the rubrics of the six days of creation. The older geneses, whether of the world or of mind, are so simple and ultimate, have been rounded to such epic completeness and sublimity, that as they are superseded by still larger and loftier conceptions, their dissolutive phases are often pathetic. The pathos here lies in the naive unconsciousness with which the system of universal consciousness unfolds all its vast canvas of definition on the stormiest of all seas that science tries to navigate. Definitions make the fibre of the book, and even the favorite form of sentence. The author is always working from partial to complete definitions or conversely. There are scores of formally quite novel definitions of nearly all the subject matter of psychology. They are treated as self-luminous, or, at most, their fit or self-relation is their justification, and these constitute the warp of the entire fabric. Viewed from the standpoint of facts, very few of them are satisfactory, and many we believe to be fundamentally wrong and misleading. To enter upon this, however, could only at most open perhaps long

but certainly fruitless controversy. But the author is more intent on the mutual interpretation and coherence of his network of definitions than on their relation to facts, and it is just this that makes his book as unitary as Dr. McCosh's is rambling and incoherent, as positive as Professor Bowne is negative. The "self," *e. g.*, is treated as something of settled and exact connotation, simple and undefinable and immaterial, without a hint or suspicion of the vast problems opened by both disease and by hypnotism, pointing to its derivative, or at least exceedingly complex nature. Memory is treated only as a member of a hierarchy of faculties, and with no word to suggest that there now lies the chief field of controversy in psychology between a material and pneumatic view of soul. The whole vast field of what was at first and so crudely termed by Hartman the unconscious, and where the scientific study of psychic activities has of late won its chief triumphs, is substantially ignored, although consciousness itself, with which the author is solely concerned, we are told "can be neither defined or described." To say that an act is unconscious means simply that "the act is done by the body" as a result of simultaneous association.

Besides definitions, the other ingredient of the book is illustrative facts. In the selection and use of these, for which the writer is often indebted to the results of modern scientific methods and is duly grateful, lies the other chief merit of the book, which, however, by a man of great ability as Dr. Dewey clearly is, might have been written half a century ago, and have been poorer only by a number of pat physiological illustrations. The facts are never allowed to speak out plainly for themselves or left to silence, but are always "read into" the system which is far more important than they. They are nearer to the sphere of sensation, incoherent, dark, solitary, than to the pure self-luminous light of self-consciousness, which is turned on them in these pages. In the field of these facts the statements are extremely often vague, inexact and even mistaken, and abound in the errors, often petty, sometimes grave, of non-expertness. These we can only sample. "A *wave length* of .00009 millimetre," it is said, can excite the sense of hearing. The retinal image is "interrupted by the blind spot." Flavor is said to involve tactile elements. The tone of a tuning fork is simple; "all others are complex." The whole statement of this great discovery, which Helmholtz calls "the most important of recent times," is vague and general to the verge of utter unintelligibility. Four or five times in the book we are told of the lower and upper limits of tone-perception, and the sensation above 40,000 vibrations a second is repeatedly described as "whirring," a term it hardly seems as if one who had once felt it could apply. "Whirring" is near the lower limit. "It is highly probable that the auditory nerve continues the sound stimulus in vibrating form." Heat is said to be a stimulus that "affects all sensory organs alike." Touch "is distributed by means of the skin over the whole body." Again, "the skin is regarded as made up of myriads of sensory circles." All but hot and cold spots on the skin are said to be "sensitive to no kind of temperature distinction," and cocaine anaesthesia and leaves the parts affected "as sensitive to differences of heat and cold as ever." "The reason that we do not see the stars in the daytime is that they do not give $\frac{1}{100}$ of the light of the sun." The psycho-physic law unquestionably merits far fuller treatment in any psychology. Almost nothing is said of in-

stinct or of morbid or anthropological psychology. Omissions, however, may be pardoned, inaccuracies never. If we are to have facts and results of laborious scientific work, let them be stated clearly and exactly. Dr. Dewey's method is through and through speculative, and psychology in its leading features is to him one of the most complete and finished sciences, instead of being in the most interesting stage of uncertainty and incompleteness. Not only all actual but all possible future facts are certain to take their place in this idealistic scheme. They may indeed enrich it, but can never essentially change it. In the open field of research, however, it is precisely these general views that are now most uncertain and wavering. Is self-consciousness inscrutable, and ultimate, and supreme? What is it, what is the self, and what is knowledge? Is there a "chasm"? Is sensation pure and manifold, or is it the most perfect knowledge, reason being sensation in the making, as Maeh assumes? What are ideas, and can we know an "organic unity" more complete than, say, a gaglio cell? Is not such an unity rather in the nervous system than in conscious thought? What if consciousness be not only a partial and fragmentary manifestation of individual life, but, as some postulate, a form of disintegration, a set of signs of the imperfect working of our infinitely complicated automatic apparatus? None of these are open questions for Dr. Dewey. It is not enough to know even if we know truly, but we must know that we know. It is not sufficient for light to shine; it must light itself. Even "the perceived world is more than the existent world." One who philosophizes by this method might exactly as well write a text book on any science whatever as on psychology. The light is always essentially lighting itself, from whatever objects it happens to be reflected. As an artist is less interested in the subject of a picture printed on the programme, or the philologist cares less for the story of a classic writer, but both are more intent on an ulterior analysis that shall reveal the great elements of style and motive, and reach a meaning below the author's consciousness, so the modern psychologist studies the great systems of philosophic thought—this with the rest. In the system of "progressive self-realization" in the idealistic sense he sees the lift and expansion of adolescent, altruistic forces, always inspiring and ennobling, which every young man is the stronger and broader for having felt, the enthusiasm of which no student of any philosophic subject can miss without grave loss, and to the meaning of which, having felt, he will always remain pious. But it is a stage of development which minds that come to full scientific maturity are certain to transcend. Its phrases grow dim and unreal, and have a hollow, uncertain sound, in the quest of something more definite and real and systematic. Were this issue reached at the end, or tendencies to this larger view seen in the author, the propaedeutic virtue of the book would be greatly enhanced. To students inclined to immerse themselves in an ideal view of the world it will prove very stimulating, but dire will be the disappointment of those who hope to find in it the methods or results of modern scientific psychology. The literary references at the end of the chapters will prove very helpful, but those of most scientific value are not much utilized in the text, and nearly all these authors would not agree with the argument, for such it is, of the work. Finally, for classroom use the book is far from satisfactory. Statistics now before us, embracing nearly three hundred colleges, are very far from sus-

taining the statement of the preface that "it is the custom of our colleges to make psychology the path by which to enter the fields of philosophy."

Elements of Physiological Psychology. A Treatise of the Activities and Nature of the Mind, from the Physical and Experimental Point of View. By George T. Ladd, Professor of Philosophy in Yale University. New York, 1887. pp. 696.

Thanks to Professor Ladd's book—it is at last possible to read a plain statement of the facts of a good part of the field of experimental psychology in English. Its merit in this fundamental respect is incomparably greater than any one book in our language, and it is likely to be for a long time indispensable to every student of the subject not familiar with German. Roughly speaking, over five of his nine hundred pages are devoted to a condensed and generally clearly arranged account of results of special scientific investigations, less concisely stated than in Hermann, but more lucid than in Wundt. The facts are often gathered with great industry from many special monographs more recent than the chief German text books, and along some lines brought down to date without substantial omissions. The author is not intent on illustrating any theory or system belonging to an utterly different attitude, period and method, or stage of development, but the system consists in a plain grouping of the facts which are allowed to speak out for themselves. Taken all in all, the book cannot fail to have a most wholesome and stimulating effect on the study of mental phenomenon in the institutions of higher education in this country. It should be read by students of medicine and theology, as well as of philosophy, and teachers who desire to know the scientific basis of modern methods of pedagogy will derive great benefit from its pages. The vast fields of morbid and also of anthropological psychology, psycho-genesis and instinct, which might be included in the title, are excluded, and even within the limits imposed on himself by the author, there are many deficiencies, but from the fact of so large a book, covering only a part of its field, the reader will readily infer the immense accumulation of material which already crowds the psycho-physic domain, and superficial or disparaging text-books in this field will henceforth be impossible, or at least ignored. All this applies to the first two parts, or to the first two-thirds of the book only. The first part is devoted to the nervous mechanism. The nervous elements are first considered chemically and histologically and physiologically, and then their combination into a system involving a sketch of the general anatomy of the cerebro-spinal system. Nerves as conductors, automatic and reflex functions and organs, the development of the nervous system and the mechanical theory of its action, are each given a chapter. Part second is on the correlations of the nervous mechanism and the mind. Two long chapters are given to localization, and two to the quality of sensations, one to their quantity; then come two chapters vaguely entitled the presentations of sense, devoted to the perception, as it is more commonly termed of space, form, motion, etc.; then come physiological time, feelings, and a final and isolated anthropological chapter on certain statistical relations of the body and mental phenomena. These chapters are illustrated by one hundred and fourteen wood cuts, about ninety of